

AMENDMENTS TO THE CLAIMS

Claim 1. (currently amended): A method of copy protecting an optical disc carrying encoded data, control data, and an authenticating signature, the encoded data, control data and the authenticating signature having been applied to the disc during a mastering process, the method comprising:

making up the authenticating signature from data patterns arranged such that the authenticating signature cannot be accurately written onto a copy disc by a writer for recordable discs which has a limited ability to look ahead during encoding, wherein the data patterns of the authenticating signature are arranged to have a DSV (digital sum value) which has to cause DSV problems for the writers of recordable discs, the data patterns being arranged to have a rapid rate of change over a significant period of time wherein as a result of the rapid rate of change the transitions in [the] an EFM (eight to fourteen modulation) signal generated from the data patterns are shifted from their ideal values or and the ability of disc drives to maintain optimal head positioning is compromised thereby to cause DSV problems for the writers of recordable discs.

Claim 2. (previously presented): A method according to claim 1, wherein the existence of corrupted or otherwise incorrect data in a particular sector on the optical disc signifies that that disc is not original whereby its use may be prevented.

Claim 3. (previously presented): A method according to claim 1, wherein successful operation of the copy protected disc requires that the

disc be present in the drive and that a correct authenticating signature be readable therefrom.

Claim 4. (canceled)

Claim 5. (currently amended): A method according to claim 1, wherein the data patterns additionally to the rapid rate of change ensure that the DSV has an absolute value significantly greater than usual.

Claim 6. (previously presented): A method according to claim 1, wherein the data patterns which cause the DSV problems are repeated patterns of values.

Claim 7. (previously presented): A method according to claim 1, wherein the size of the data patterns causing the DSV problems is a predetermined amount.

Claim 8. (canceled)

Claim 9. (previously presented): A method according to claim 1, wherein the data patterns which cause the DSV problems are arranged to produce a DSV which has a substantial low frequency component lower than that of the lowest signal frequency that does not cause DSV problems.

Claim 10. (previously presented): A method according to claim 1, wherein the authenticating signature is also made up of sectors containing only zeros which are provided both before and after sectors containing the data patterns.

Claim 11. (currently amended): A copy protected optical disc carrying data comprising:

encoded data, control data, and an authenticating signature which were applied to the disc during mastering, wherein the authenticating signature is made up of data patterns arranged such that the authenticating signature cannot be accurately written onto a copy disc by a writer for recordable discs which has a limited ability to look ahead during encoding, wherein the data patterns of the authenticating signature are arranged to have a DSV (digital sum value) ~~which has to cause DSV problems for the writers of recordable discs, the data patterns being arranged to have a rapid~~ rate of change over a ~~significant~~ period of time wherein as a result of the rapid rate of change the transitions in [the] an EFM (eight to fourteen modulation) signal generated from the data patterns are shifted ~~from their ideal values or~~ and the ability of disc drives to maintain optimal head positioning is compromised ~~thereby to cause DSV problems for the writers of recordable discs.~~

Claim 12. (previously presented): A copy protected optical disc according to claim 11, wherein the data patterns of the authenticating signature have a size and/or a nature which ensures that they cannot be accurately written by a writer of recordable discs.

Claim 13. (canceled)

Claim 14. (currently amended): A copy protected optical disc according to claim 11, wherein the data patterns additionally to the rapid rate of change ensure that the DSV has an absolute value significantly greater than usual.

Claim 15. (previously presented): A copy protected optical disc according to claim 11, wherein the data patterns which cause the DSV problems are repeated patterns of values.

Claim 16. (previously presented): A copy protected optical disc according to claim 11, wherein the size of the data patterns causing the DSV problems may be a predetermined amount.

Claim 17. (canceled)

Claim 18. (previously presented): A copy protected optical disc according to claim 11, wherein the data patterns which cause the DSV problems are arranged to produce a DSV which has a substantial low frequency component lower than that of the lowest signal frequency that does not cause DSV problems.

Claim 19. (previously presented): A copy protected optical disc according to claim 11, wherein the data patterns have been copied to a plurality of sectors on the optical disc.

Claim 20. (currently amended): A method of authenticating a copy protected optical disc carrying encoded data, control data, and an authenticating signature, the encoded data, control data and the authenticating signature having been applied to the disc during a mastering process wherein the authenticating signature is made up of data patterns arranged such that the authenticating signature cannot be accurately written onto a copy disc by a writer of recordable discs which has a limited ability to look ahead during encoding, wherein the authenticating signature is of data patterns which cause DSV (digital sum value) problems for the writers of recordable discs, and wherein the data patterns are arranged to have a DSV which has a rapid rate of change over a ~~significant~~ period of time wherein as a result of the rapid rate of change the transitions in [the] an EFM (eight to fourteen modulation) signal generated from the data patterns are shifted ~~from their ideal values~~

~~or~~ and the ability of ~~writers of recordable discs~~ disc drives to maintain optimal head positioning is compromised ~~thereby to~~ cause DSV problems, the method comprising:

requiring a disc drive to locate and accurately read the authenticating signature on the disc in order to enable operation of the copy protected disc.

Claim 21. (canceled)

Claim 22. (currently amended): A method of enabling the mastering of an optical disc by an enabled encoder, where a pre-mastering recordable disc carries user data which is to be read by, a drive associated with the enabled encoder during the mastering process, and carries a blocking file made up of data patterns which cannot be accurately read by a disc drive wherein the data patterns are arranged to have a DSV (digital sum value) ~~which has to cause DSV problems for the disc drive, the data patterns having a rapid rate of change over a significant period of time wherein as a result of the rapid rate of change~~ the transitions in [the] an EFM (eight to fourteen modulation) signal generated from the data patterns are shifted ~~from their ideal values or~~ and the ability of disc drives to maintain optimal head positioning is compromised ~~thereby to~~ cause DSV (digital sum value) problems for a disc drive, the method comprising:

providing on the pre-mastering recordable disc information as to the existence and location of the blocking file, the drive associated with the enabled encoder being arranged not to read the blocking file in response to the existence and location information.

Claim 23. (currently amended): A pre-mastering recordable disc for use in a process for mastering optical discs, wherein the pre-mastering recordable disc carries data comprising:

user data to be carried on the optical discs, and

a blocking file made up of data patterns added to the pre-mastering recordable disc during the authoring or premastering process, and wherein the data patterns are arranged to have a DSV (digital sum value) ~~which has~~ arranged to cause DSV problems for writers of recordable discs, the data patterns having a rapid rate of change over a significant period of time wherein as a result of the rapid rate of change the transition transitions in [the] an EFM (eight to fourteen modulation) signal generated from the data patterns are shifted ~~from their ideal values or~~ and the ability of disc drives to maintain optimal head positioning is compromised ~~thereby to cause DSV (digital sum value) problems for a disc drive, thereby the data patterns cannot be accurately read by a disc drive.~~

Claim 24. (canceled)

Claim 25. (currently amended): A pre-mastering recordable disc according to claim 23, wherein the data patterns additionally to the rapid rate of change cause a DSV which has an absolute value significantly greater than usual.

Claim 26. (previously presented): A pre-mastering recordable disc according to claim 23, wherein the data patterns which cause the DSV problems are repeated patterns of values.

Claim 27. (previously presented): A pre-mastering recordable disc according to claim 23, wherein the size of the data patterns producing the required DSV may be a predetermined amount.

Claim 28. (canceled)

Claim 29. (previously presented): A pre-mastering recordable disc according to claim 23, wherein the data patterns which cause the DSV problems are arranged to produce a DSV which has a substantial low frequency component lower than that of the lowest signal frequency that does not cause DSV problems.